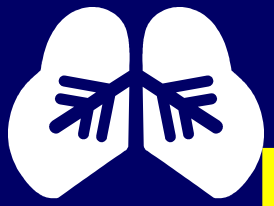
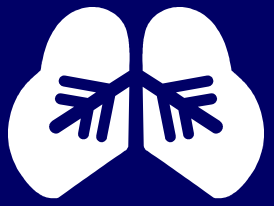


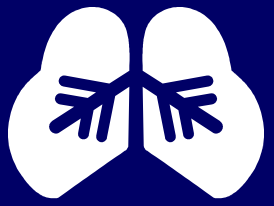
Component 1: Measures of Assessment and Monitoring

- Two aspects:
  - Initial assessment and diagnosis of asthma
  - Periodic assessment and monitoring



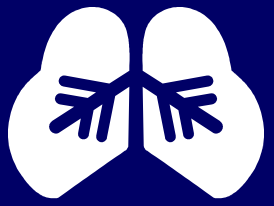
Initial Assessment and Diagnosis of Asthma

- Determine that:
  - Patient has history or presence of episodic symptoms of airflow obstruction
  - Airflow obstruction is at least partially reversible
  - Alternative diagnoses are excluded



Initial Assessment and Diagnosis of Asthma
(continued)

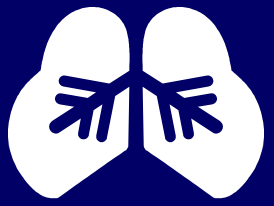
- Methods for establishing diagnosis:
  - Detailed medical history
  - Physical exam
  - Spirometry to demonstrate reversibility



Initial Assessment and Diagnosis of Asthma
(continued)

Does patient have history or presence of episodic symptoms of airflow obstruction?

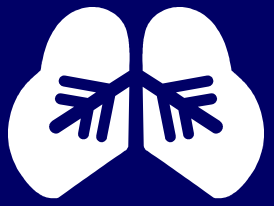
- Wheeze, shortness of breath, chest tightness, or cough
- Asthma symptoms vary throughout the day
- Absence of symptoms at the time of the examination does not exclude the diagnosis of asthma



Initial Assessment and Diagnosis of Asthma (continued)

Is airflow obstruction at least partially reversible?

- Use spirometry to establish airflow obstruction:
  - FEV_1 < 80% predicted;
  - FEV_1/FVC <65% or below the lower limit of normal
- Use spirometry to establish reversibility:
  - FEV_1 increases ≥12% and at least 200 mL after using a short-acting inhaled $beta_2$-agonist



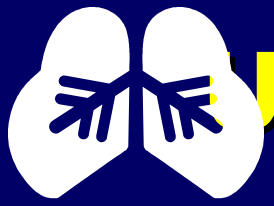
Initial Assessment and Diagnosis of Asthma
(continued)

Are alternative diagnoses excluded?

- Vocal cord dysfunction, vascular rings, foreign bodies, other pulmonary diseases

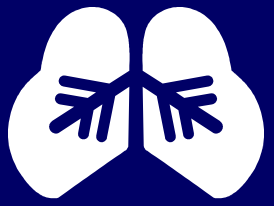
Additional Tests

Reasons for Additional Tests	The Tests
Patient has symptoms but spirometry is normal or near normal.	– Assess diurnal variation of peak flow over 1 to 2 weeks. – Refer to a specialist for bronchoprovocation with methacholine, histamine, or exercise; negative test may help rule out asthma.
Suspect infection, large airway lesions, heart disease, or obstruction by foreign object	– Chest x-ray
Suspect coexisting chronic obstructive pulmonary disease, restrictive defect, or central airway obstruction	– Additional pulmonary function studies – Diffusing capacity test
Suspect other factors contribute to asthma (These are not diagnostic tests for asthma.)	– Allergy tests—skin or in vitro – Nasal examination – Gastroesophageal reflux assessment



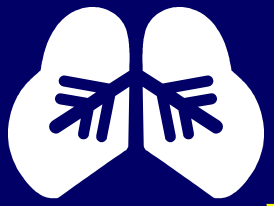
Underdiagnosis of Asthma in Children

- The majority of people with asthma experience onset before age 5.
- Commonly misdiagnosed as:
  - Chronic bronchitis
  - Wheezy bronchitis
  - Recurrent croup
  - Recurrent upper respiratory infection
  - Recurrent pneumonia



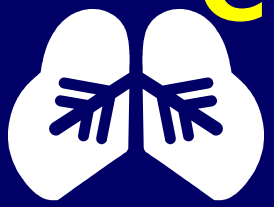
Wheezing Infants: When Is It Asthma?

- Patterns of wheezing in infants:
  - Those who develop asthma
  - Those who do not develop asthma.
- Both groups generally benefit from a trial of treatment



Wheezing Infants: When Is It Asthma? (continued)

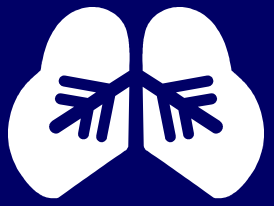
- Risk factors for asthma:
  - Family history of asthma
  - Atopy
  - Perinatal exposure to aeroallergens and irritants (e.g., passive smoke)



Classification of Asthma Severity: Clinical Features Before Treatment

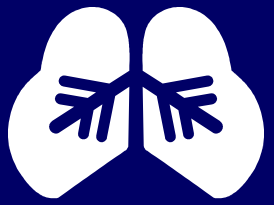
	Days With Symptoms Variability	Nights With Symptoms	PEF or FEV_1	PEF
Step 4 *Severe Persistent*	Continuous	Frequent	≤60%	>30%
Step 3 *Moderate Persistent*	Daily	≥5/month	>60%-<80%	>30%
Step 2 *Mild Persistent*	3-6/week	3-4/month	≥80%	20-30%
Step 1 *Mild Intermittent*	≤2/week	≤2/month	≥80%	<20%

Footnote: The patient's step is determined by the most severe feature.



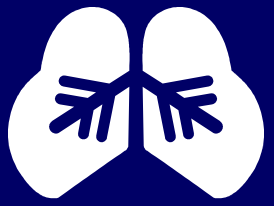
General Guidelines for Referral to an Asthma Specialist

Based on the opinion of the Expert Panel, referral for consultation or care to a specialist in asthma care (usually, a fellowship-trained allergist or pulmonologist; occasionally, other physicians with expertise in asthma management developed through additional training and experience) is recommended when:



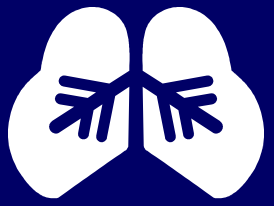
General Guidelines for Referral to an Asthma Specialist (continued)

- Patient has had a life-threatening asthma exacerbation.
- Patient is not meeting the goals of asthma therapy.
- Signs and symptoms are atypical.
- Other conditions complicate asthma.



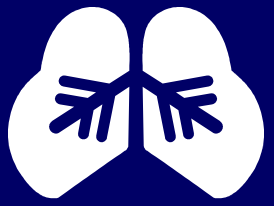
General Guidelines for Referral to an Asthma Specialist (continued)

- Additional diagnostic testing is indicated.
- Patient requires additional education.
- Patient is being considered for immunotherapy.
- Patient has severe persistent asthma.



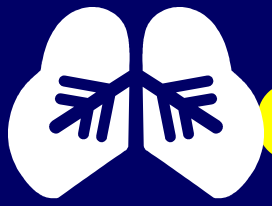
General Guidelines for Referral to an Asthma Specialist (continued)

- Patient requires continuous oral corticosteroid therapy or high-dose inhaled corticosteroids.
- Child <5 and requires step 3 or 4 care. When child is <5 and requires step 2 care, referral should be considered.



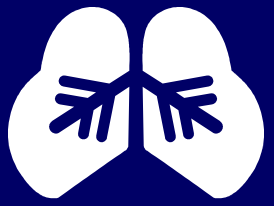
Periodic Assessment and Monitoring

- Teach all patients with asthma to recognize symptoms that indicate inadequate asthma control.
- Patients should be seen by a clinician at least every 1 to 6 months.



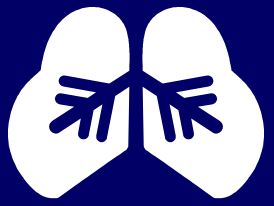
Goals of Asthma Therapy

- Prevent chronic and troublesome symptoms
- Maintain (near-) “normal” pulmonary function
- Maintain normal activity levels (including exercise and other physical activity)



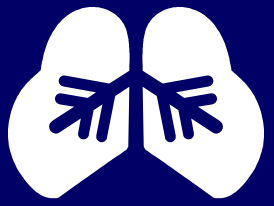
Goals of Asthma Therapy (continued)

- Prevent recurrent exacerbations and minimize the need for emergency department visits or hospitalizations
- Provide optimal pharmacotherapy with minimal or no adverse effects
- Meet patients' and families' expectations of, and satisfaction with, asthma care



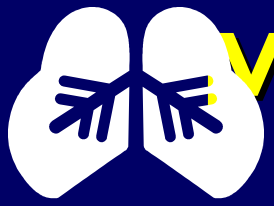
Monitoring the Goals of Therapy

- Recognition of signs and symptoms
- Spirometry and peak flow
- Quality of life/functional status
- Patient self-monitoring and health care utilization
- Adherence, beta$_2$-agonist use, oral corticosteroid bursts, side effects
- Satisfaction with asthma control and quality of care



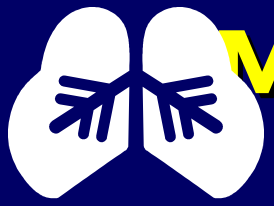
Monitoring Symptoms

- Symptom history should be based on a short (2 to 4 weeks) recall period
- Symptom history should include:
  - Daytime asthma symptoms
  - Nocturnal wakening as a result of asthma symptoms
  - Exercise-induced symptoms
  - Exacerbations



Monitoring Lung Function: Spirometry

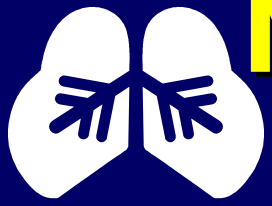
- Spirometry is recommended:
  - At initial assessment
  - After treatment has stabilized symptoms
  - At least every 1 to 2 years



Monitoring Lung Function: Peak Flow Monitoring

Patients with moderate-to-severe persistent asthma should:

- Have a peak flow meter and learn to monitor their peak flow
- Do daily long-term monitoring or short-term (2 to 3 weeks) monitoring
- Use peak flow monitoring during exacerbations



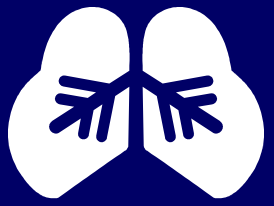
Monitoring Lung Function: Peak Flow Monitoring (continued)

Patients should:

- Measure peak flow on waking before taking a bronchodilator
- Use personal best
- Be aware that a peak flow <80% of personal best indicates a need for additional medication
- Use the same peak flow meter over time

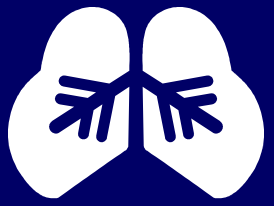
Importance of Action Plan

"It is the opinion of the Expert Panel that all patients should be given a written action plan and be instructed to use it."



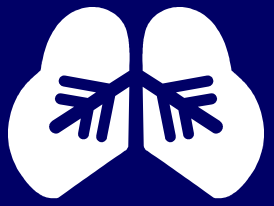
Monitoring History of Exacerbations

- Review patient self-monitoring records
- Ask about frequency, severity, and causes of exacerbations
- Ask about unscheduled, emergency, or hospital care



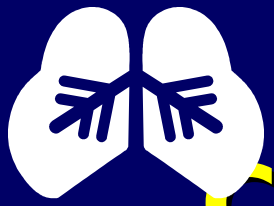
Monitoring Quality of Life/Functional Status

- Periodically assess:
  - Missed work or school due to asthma
  - Reduction in usual activities due to asthma
  - Sleep disturbances due to asthma
  - Change in caregiver activities due to child’s asthma



Monitoring Pharmacotherapy

- Monitor:
  - Patient adherence to regimen
  - Inhaler technique
  - Frequency of inhaled short-acting beta$_2$-agonist use
  - Frequency of oral corticosteroid “burst” therapy
  - Side effects of medications



Working Within Time Constraints of Office Visits

- Have patients complete questionnaire in waiting room
- Schedule more frequent visits initially
- Delegate some tasks to nurses or office staff:
  - Spirometry
  - Review MDI technique
  - Review daily peak flow